

ABSTRACT

A porous insulating layer-forming apparatus includes a solution-applying portion, a solidified layer-forming portion, a vacuum drying portion, a firing portion, and an airtight treatment portion. The solution-applying portion applies a solution in which an insulating material is dissolved, onto a workpiece. In the solidified layer-forming portion, a cooling plate cools the solution applied onto the workpiece to a temperature less than or equal to the melting point of the solvent in the solution to yield a solidified layer. In the vacuum drying portion, a decompression chamber is decompressed by a vacuum pump to vaporize the solvent in the solidified layer, thereby changing the solidified layer into a porous solidified layer. In the firing portion, the porous solidified layer is hardened by firing on a hot plate to yield a porous insulating layer. In the airtight portion, heat rays emitted from a flushing device instantaneously irradiate the surface of the porous insulating layer to melt the surface to cover the pores in the surface, thereby giving the porous insulating layer airtightness.